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ABSTRACT

The theoretical perspective presented in this monograph is intended to answer two fundamental questions: What accounts for the input of the gatekeeping institution in the newsroom? and What accounts for the output of the gatekeeping institution? The organizational role of gatekeeper is to monitor incoming information for its news content; to eliminate those items which are not newsworthy, are irrelevant to the audience, or were already covered; and to submit newsworthy items to the news editor for final consideration. Following the presentation of the theoretical perspective and a review of the limited number of gatekeeper investigations, the monograph includes a pilot study designed to answer empirically those questions posed in theory. A narrative discussion of the results contains tables and figures, and areas for further research are suggested. (RB)

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JOHN DIMMICK

The Gate-Keeper: An Uncertainty Theory

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Introduction

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In his seminal article on the structure and function of communication in society, Harold Lasswell defined surveillance of the environment as one of the functions of communication.[1] He was perhaps the first to articulate the idea that all organisms and all collectivities of organisms require information concerning their environment. Charles Wright defines the surveillance activity as ". . . the collection and distribution of information concerning events in the environment both outside and within any particular society. . . ."[2] Surveillance of the environment is an imperative which in industrial societies is carried on by a corps of specialists. In the surveillance process, news organizations and their gate-keepers are the nexus which mediate between the environment and the society's members.

Increasingly, the scope of gate-keeper research has widened from a concentration on bias and selective perception of editors and reporters to a recognition of the organizational context in which gate-keepers work. This recognition is explicit in Breed's pioneering study of social control in the newsroom[3] and in William Porter's characterization of news-gathering and processing as ". . . an almost classic case of bureaucratization."[4] In order to understand the process by which news organizations transform events in the environment into the content of newspapers and news broad-

[1] Harold D. Lasswell, "The Structure and Function of Communication in Society," in Lyman Bryson, ed., *The Communication of Ideas* (New York: Harper & Bros., 1948), pp. 37-51, reprinted in Wilbur Schramm and Donald Roberts (eds.), *The Process and Effects of Mass Communication*, 2nd. ed. (Urbana: University of Illinois Press, 1972), pp. 84-99, and elsewhere.

[2] Charles R. Wright, "Functional Analysis and Mass Communication," *Public Opinion Quarterly*, 24:605-20 (Winter 1960); reprinted in Lewis Anthony Dexter and David Manning White (eds.), *People, Society and Mass Communication* (New York: The Free Press of Glencoe, 1964), p. 97.

[3] Warren Breed, "Social Control in the Newsroom: A Functional Analysis," *Social Forces* 33:323-35 (May 1955).

[4] William Porter, "Journalism," in David L. Sills (ed.), *International Encyclopedia of the Social Sciences* (New York: MacMillan and Company and the Free Press, 1968), p. 270.

casts, it is necessary to shift the level of analysis from the gate-keeper to the gate-keeping organization.

At the highest level of abstraction, a news organization may be viewed as a system engaging in input-output relationships with its environment. The news defining process can, therefore, be understood as successive mappings of environmental events by the news organization into its input and its output. The news organization's input may be composed, for example, of reporters' copy or unedited film, while the organization's output is the set of stories which make up the news broadcast or the newspaper.

Walter Buckley characterized the environment as ". . . *a set or ensemble of more or less distinguishable elements, states or events*, whether these discriminations are made in terms of spatial or temporal relations, or properties."[5] The concept of the environment may be defined as:

$$[i] \qquad \{E \mid e_1 \ldots e_n, \epsilon E\}$$

There is a finite set E of environmental events such that all e are elements of E.

One might at first be tempted to specify that the set E is infinite in light of Buckley's comment on the ". . . endless variety of the environment."[6] However, in terms of the degree of tangibility, mathematicians have observed it is as difficult to envision a very large number of elements say $10{,}000^{1{,}000{,}000}$ as it is to envision an infinite number.[7]

Broadly conceived as an input-output or gate-keeping system, the news organization maps events in the environment into inputs and then maps these inputs into output. There are, then, two distinct sub-processes a *sensing* or input identification process and a *valuation* or output defining process. These two sub-processes define two sets of decision problems which must be solved by the organization's gate-keepers.

The decision problem of identifying input—the sensing process —may be defined in the following way:

[5] Walter Buckley, *Sociology and General Systems Theory* (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1967), p. 51.

[6] *Ibid.*

[7] Robert R. Stoll, *Set Theory and Logic* (San Francisco: W. H. Freeman and Company, 1963), p. 3.

[*ii*] $I: E \rightarrow X$ BEST COPY AVAILABLE

I is a function or mapping on the set E into the set X where the set X denotes the news organization's input.

Similarly, the decision problem associated with the valuation or output defining process may be defined as:

[*iii*] $V: X \rightarrow Y$

V is a function or mapping on the set X into the set Y where the set Y denotes the organization's output. The set Y, of course, is composed of fewer elements than the set X.[8]

The view implied by these definitions is that news is a relation between sets of structured variety located in news-gathering systems and their environments. News, viewed from an organizational perspective, is the account of environmental events which appears in the organization's output. The problem for theory and research is to determine how the news organization's gate-keepers solve the decision problems of identifying input and defining output. The theoretical perspective presented later treats the solution of these decision problems as a process of uncertainty reduction.

The theoretical structure and the research presented in the following pages is not a study of news organizations but rather an attempt to develop the conceptual and empirical tools which are requisite to such a study. The theoretical perspective is intended as an initial step—as a structure to be tested, elaborated and modified—in the process of building a more complete theory of gate-keeping organizations.

At the beginning of this paper, the news organization was viewed as an input-output system. The overview of the theory which follows sketches in broad outline four propositions which account for the news organization's input-identification and out-

[8] The use of set theory or mathematical logic to provide minimal mathematical structure has been suggested by M. D. Mesarovic ("A Mathematical Theory of General Systems," in George J. Klir (ed.), *Trends in General System Theory* (New York: Wiley-Interscience, 1972). Such an approach has the advantage of providing simple, concise and general definitions. However, as Mesarovic points out, such general formulations do not guarantee that the behavior will be susceptible to treatment by more specific mathematical formulations.

put-definition activities. The theoretical rationale and empirical support underlying the propositions is then presented in detail. Finally, the results of a pilot study which was conducted to test one of the propositions are reported and some suggestions for further research are presented.

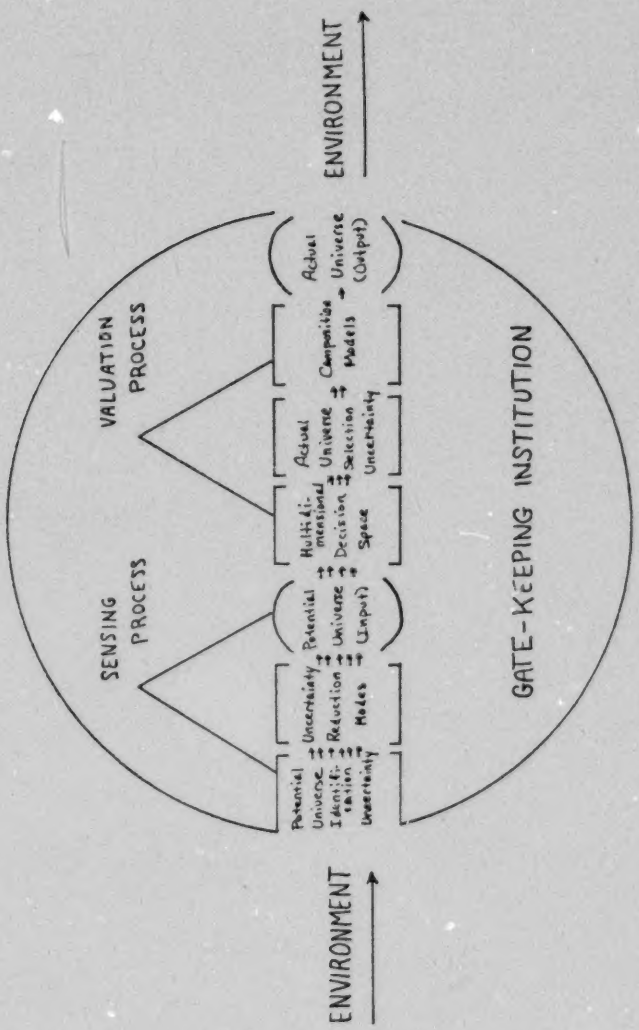

FIGURE 1—Graphic Overview of the Theory
(See text, Page 5)

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Overview of the Theory

THE THEORETICAL perspective presented here is intended to answer two fundamental questions: *1)* what accounts for the *input* of the gate-keeping institution? and *2)* what accounts for the *output* of a gate-keeping institution? Figure 1 (p. 4) is a graphic representation of the theoretical perspective.

The total process by which a gate-keeping organization translates events in its environment into newspapers and news broadcasts, as stated earlier, may be separated into two sub-processes, a *sensing* process and a *valuation* process. Explanation consists, in part, of specifying necessary and sufficient conditions for the occurrence of a phenomenon. To define a particular event in the environment as news (i.e., to include it in the output of the gate-keeping institution), it is first necessary for the gate-keepers within the institution to be aware of the event. The crucial importance of the gate-keeper's awareness that an event has occurred is made clear by the late NBC newsman, Frank McGee.

> You can't get all the news. That is something most people don't realize. The simple knowledge that something has happened often isn't available to us. Sometimes it is deliberately hidden from us. I often wonder, on any given day, what things are happening that are of crucial importance but of which we know nothing. . . .[9]

It is sufficient for an event to be defined as news if the event is valued by the news organization's gate-keepers above their "in-out" threshold. Broadly speaking, these two sub-processes, awareness or *sensing*, and *valuation* may be identified with the processes of identifying input and defining output, respectively. Taken together, sensing and valuation are the necessary and sufficient conditions for defining an event as news.

Within the sensing sub-process, this theoretical perspective proposes an initial uncertainty—*potential universe identification* uncertainty—on the part of the gate-keeper, concerning which events

[9] Richard Ballad, "Hugh Downs to Frank McGee: The Big Switch on the Today Show," *Look*, October 5, 1971, p. 15.

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shall comprise the potential universe of news items, the organization's input. This initial uncertainty is reduced, and a potential universe of events is identified, by means of a number of uncertainty reduction modes. For example, a gate-keeper might use the AP wire budget, the front page of the New York *Times* or the stories broadcast by the television networks as a guide to which stories should be considered for publication by his organization. These uncertainty reduction modes serve to identify a potential universe of events.

Since this potential universe is larger than the number of items which may be printed or broadcast, due to the constraints of time or space, some additional decision procedure must be employed. The theoretical perspective proposes that the gate-keeper's decision space is multidimensional, that the gate-keeper employs more than one criterion at once in selecting events for publication or broadcast.

Multidimensionality leads to intransitivities in the decision space. That is, the gate-keeper may perceive two news stories as being equally important or equally unimportant. For example, one story may be highly timely and the other highly proximate. Therefore, the journalist may not be able to say that one news story is more worthy of being published or broadcast than the other. These intransitivities are termed *actual universe selection* uncertainty.

This uncertainty is resolved by the gate-keeper's use of a composition model. This is a method of combining the selection criteria in some way to determine which stories will be selected from the potential universe to become the output of the news organization. For example, the gate-keeper could decide to select for publication or broadcast those stories which he rates highly on criteria he considers important.

An operational meaning of uncertainty may be given on two distinct levels—*potential universe identification uncertainty* and *actual universe selection uncertainty*. The former term refers to the uncertainty occasioned by the need to identify a set of events which form the potential universe of items or input, while the second term refers to the uncertainty occasioned by the necessity of selecting some of the items in the potential universe for publication or broadcast and rejecting others. These two constructs and the ways in which the uncertainties are reduced are associated

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with the processes of identifying input (sensing) and defining output (valuation).

The propositions which form the theoretical perspective presented in the following pages are intended to answer the two basic questions posed earlier: what accounts for a news organization's input? and what accounts for its output? Propositions one and two attempt to answer the first question, while propositions three and four are intended to answer the second question.

The term gate-keeper in this theoretical framework denotes an occupant of one of four organizational roles—reporter, editor, news executive (or manager) and news source. However, since the theory focuses on the news organization, it pertains to the news source only in his interaction with the news organization's boundary-spanning personnel, of which more will be said presently.

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An Uncertainty Theory

THE THEORY may be stated in four propositions.

Proposition 1: Gate-keepers are uncertain which events are to be defined as news.[10]

The proposition that the journalist is uncertain which of the day's events are news and which are not may, at first, seem contrary to common sense and everyday reality. The publication of newspapers on a daily basis and the regularity of the appearance of Walter Cronkite and "The CBS Evening News" would seem to refute the proposition. The gate-keeper's uncertainty, however, does not imply that he sits quietly in the darkness like Dostoyevsky's underground man, vacillating and endlessly ruminating the flux of events. The omnipresent deadline forces him to choose.

An understanding of potential universe identification uncertainty and the ways in which the uncertainty is reduced lies in considering "news" not as objective physical events but as occurrences in the realm of social reality. The classic experiments by

[10] While their terminology differs from that used by the author, Melvin Marx and William Hillix, in *Systems and Theories in Psychology* (New York: McGraw-Hill Book Company, Inc., 1963), p. 15, explain the relationship which, in this theoretical perspective, holds between the construct *potential universe identification uncertainty* and the uncertainty reduction modes: "There are hypotheses which are analogous to mathematical postulates. Their function is not to specify directly an empirical outcome but to serve as a starting point for the derivation of other statements that do specify an empirical outcome. Such statements have operational meaning only in terms of their derivations."

The proposition that the journalist is uncertain serves as the starting point for the proposition that the journalist uses various modes of behavior to reduce his uncertainty (see Proposition 2). The major theoretical terms are called propositions rather than postulates, axioms or theorems because, although there is considerable empirical support for some of the propositions, they can hardly be termed laws. Kenneth Bailey, in "Evaluating Axiomatic Theories," in Edgar F. Borgatta and George W. Bohrnstedt (eds.), *Sociological Methodology 1970* (San Francisco: Jossey-Bass, Inc., 1970), p. 63, has suggested the substitution of the term proposition for postulate to avoid confusion with axiomatic theories whose postulates rest on established empirical laws.

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Asch, for example, demonstrate that even a supposedly "objective" event such as judging the relative length of two lines will sometimes be determined by the judgments of others.[11] Many other writers in the social sciences have pointed out that social reality, because of its group-dependent nature, must constantly be validated. The groups and institutions to which the individual is allied perform the function of defining and sustaining his attitudes, beliefs and values. For example, Theodore Newcomb writes:

> There are few if any objects so private that one's orientation toward them is uninfluenced by others' orientations. This is particularly true with regard to what has been termed "social reality;" i.e., the less the possibility of testing one's assumptions, the greater the reliance upon social confirmation as the test of what is true and valid. And even when assumptions can be put to the direct test (e.g., the child can find out for himself about the stove which he has been told is hot), social reality is often accepted as the quicker or safer test.[12]

The individual uses the social groups and institutions to which he is allied to reduce his uncertainty concerning the propriety of believing and acting in certain ways. The journalist is not exempt from this influence process. For example, Dunn describes this validation process among political reporters in a state capital.

> News is imitative because individual reporters need to have their news sense validated. The lack of concrete news definitions leaves the reporter insecure in his independent decision as to what is news. He is unsure that his evaluation of importance is correct because there are no concrete criteria upon which to base his evaluation. He seeks assurance from other reporters that his judgment is correct. He relies on other reporters to help him determine what is important, and believes that if his colleagues agree, then it really must be news.[13]

Uncertainty has also been recognized as a characteristic of decision-making at the level of the organization. Paul Hirsch points out that the cultural industries which produce non-material goods

[11] Solomon E. Asch, "Opinions and Social Pressure." Reprinted from *Scientific American*, November 1955.

[12] Theodore M. Newcomb, "An Approach to the Study of Communicative Acts," *Psychological Review* 60:393-404 (1953), reprinted in Alfred G. Smith (ed.), *Communication and Culture* (New York: Holt, Rinehart and Winston, Inc., 1966), p. 68.

[13] Delmer D. Dunn, *Public Officials and the Press* (Reading, Massachusetts: Addison-Wesley Publishing Company, 1969), p. 30.

such as books and movies face highly uncertain environments at their input and output boundaries and, consequently, have developed strategies for coping with the uncertainty.[14] Similarly, Stinchecombe writes:

> All organizations try to pursue their goals in the face of uncertainty and variability of the environment and try to reduce the uncertainty. . . . Such an equifinal pattern suggests a functional explanation of organizational behavior in terms of uncertainty reduction.[15]

Proposition 2 states several of these uncertainty reduction modes which have been derived from the findings of the extant gate-keeper studies. The list of uncertainty reduction modes should be treated as what Blumer called "sensitizing concepts" in that they do not prescribe what to see but, rather, suggest directions in which to look.[16]

Proposition 2: Gate-keepers' potential universe identification uncertainty is reduced by: 1) accepting the definition of news of an "opinion leader" in a group within which he works, 2) arriving at a group consensus, 3) monitoring the output of a reference institution, 4) accepting the policy of the organization for which he works, 5) accepting the definitions of news promulgated by his sources and *6) using his own group-related attitudes and values.*

Proposition two does not imply that the gate-keeper consciously and actively chooses the modes of uncertainty reduction outlined above, only that they can function to reduce the uncertainty. For example, an editor may internalize the policy of his superiors because he wants to keep his job. The policy, however, also simplifies the editor's decision making by functioning to reduce his uncertainty. Consequently, the motivation for adopting a mode of uncertainty reduction and the effect of the mode are clearly distinct.

Opinion Leaders (2.1)

The hypothesis that there are opinion leaders in a group of

[14] Paul M. Hirsch, "Processing Fads and Fashions: An Organization-Set Analysis of Cultural Industry Systems," *American Journal of Sociology*, 77: 639-59 (January 1972).

[15] Arthur L. Stinchecombe, *Constructing Social Theories* (New York: Harcourt, Brace and World, Inc., 1968), p. 81.

[16] Herbert Blumer, "What is Wrong with Social Theory," in William J. Filstead (ed.), *Qualitative Methodology: Firsthand Involvement with the Social World* (Chicago: Markham Publishing Company, 1970), pp. 52-62.

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newsmen who associate with each other on a beat is supported by a study by Grey.[17] Similarly, Warren Breed has pointed out the formation of reference groups in the newsroom.[18] Rivers' survey revealed how extensive the reliance of reporters in specialized fields is on experts in their various specialties.

> The press corps has become so specialized in recent years that influence sometimes depends upon individual expertise. Correspondents writing a story that has an economic angle are likely to lean heavily on the reports of Edwin L. Dale in the *New York Times* or Bernard Rossiter in the *Washington Post*. Many who find themselves needing foreign policy information borrow from James Reston and Max Frankel of the *Times* or John Hightower of AP. The science angles of different stories may reflect the work of specialists like John Finney of the *Times*, Howard Simons of the *Post*, and Bill Howard and Gene Bylinsky of Newhouse National News Service.[19]

A distinction may be drawn between using an opinion leader solely to reduce uncertainty about what is newsworthy (i.e., using an opinion leader as a guide to which events or facts are significant) and using the opinion leader as a news source (i.e., using his facts or adopting his interpretation of an event).

Consensus (2.2)

The hypothesis that a consensual process is sometimes used to define news is suggested by Malcolm Warner,[20] who reported daily meetings of the policy complex in the news departments of the three television networks. The function of these meetings was to decide which of the day's events were news and how each event defined as news should be played. Sigelman, in a study of two southeastern dailies, reported that the "star" reporters often participated with the policy complex in setting editorial policy.[21] This process of reciprocal influence is also noted by Dunn, who

[17] David L. Grey, "Decision Making by a Reporter Under Deadline Pressure," *Journalism Quarterly*, 44:419-28 (Spring 1967).

[18] *Op. cit.*

[19] William L. Rivers, *The Opinion Makers* (Boston: Beacon Press, 1965), pp. 52-3.

[20] Malcolm Warner, "TV Coverage of International Affairs," *Television Quarterly*, Spring 1968, pp. 60-75.

[21] Lee Sigelman, "Reporting the News—An Organizational Analysis," unpublished paper, Department of Political Science, Vanderbilt University, 1972.

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observes that the continuous professional interaction of reporters on a statehouse beat contributed to a homogeneity of news judgment among the reporters.[22] The result of this reciprocal influence process, whether it exists on a beat or in a newsroom, was succinctly summed up by one of Warner's respondents in a television network newsroom who said "All of us think alike."[23]

Reference Institutions (2.3)

Dimmick has suggested that news organizations may be conceived of as a complex of institutions within which certain institutions are "significant others" or reference institutions, whose output is utilized by other institutions to define news; thus that an influence process exists among news-gathering institutions.[24]

It should be noted that a reference institution may be used solely to define news (i.e., a news organization uses the output of the reference institution as a source of ideas for news stories but does not re-print or re-broadcast the output itself), or the output may be used both to define news and as a news source (i.e., the output of the reference institution is actually published by other news organizations.)

It is to be expected that the wire services constitute a major reference institution, since they, along with the television networks, are the largest and most pervasive news-gathering organizations. Gold and Simmons, for example, attributed the similarity of story usage among Iowa dailies to "uncritical acceptance" of the wire service budgets. They report, in addition, a strong relationship between the total amount of wire copy a newspaper receives and the amount of news printed in any content category.[25] Liebes reports that "Overall, 25% of the telegraph editors admitted the budgets were decisive in their decision making."[26] Likewise Walter Gieber found that the selection of wire news

[22] Dunn, *op. cit.*, p. 30.

[23] Warner, *op. cit.*, p. 68.

[24] John W. Dimmick, "The Gate-Keeper: An Institutional Approach," paper presented to Mass Media and Society Division of the AEJ Convention in Berkeley, California, August 1969.

[25] David Gold and Jerry L. Simmons, "News Selection Patterns Among Iowa Dailies," *Public Opinion Quarterly*, 29:425-30 (Fall 1965).

[26] B. H. Liebes, "Decision Making By Telegraph Editors—AP or UPI?" *Journalism Quarterly*, 43:434-42 (Autumn 1966), p. 436.

was guided by the AP wire budget and the display in morning metropolitans.[27] Hardt and White found that news stories on the front pages of metropolitan dailies were repeated on the front pages of afternoon provincial papers.[28] Hardt and White's finding supports that of Breed, who wrote concerning his interviews with the newspaper editors:

> While it is clear that many editors are independent, or "inner directed" about their decisions regarding news judgment, it also seems evident that one paper influences another concerning the journalistically vital matter of page play. The influence goes "down" from larger papers to smaller ones, as if the editor is employing *in absentia*, the editors of the larger paper to help "make up" his front page.[29]

Apparently, the New York *Times* is a major reference institution for the network news organizations. Warner found that all three of the television networks carefully monitor the *Times*.[30] Gay Talese writes that during the New York newspaper strike, "... the absence of the *Times* deprived electronic journalism of its greatest news guide. . . ."[31]

An informative example of a "negative" reference institution and an example of the interaction of the influence of reference institutions comes from a study of telegraph editors by Liebes, who reports:

> Radio news colored the views of the telegraph editor of an afternoon suburban daily. While driving to work every morning, the editor monitors the news broadcasts. If he hears a story on radio he assumes his listeners have heard it, too, since he lives in a community heavily populated with commuters. He said the local radio stations use UPI radio wire and it was his duty to give the readers different news when they came home in the evening. Therefore, he leaned to AP on major stories.[32]

[27] Walter Gieber, "Across the Desk: A Study of 16 Telegraph Editors," *Journalism Quarterly*, 33:423-32 (Fall 1956).

[28] Hanno Hardt and Michael White, "Front Page News Similarities in A.M. and P.M. Papers," *Journalism Quarterly*, 43:552-5 (Autumn 1966).

[29] Warren Breed, "Analyzing News: Some Questions for Research," *Journalism Quarterly*, 33:467-77 (Fall 1956).

[30] Warner, *op. cit.*, p. 68.

[31] Gay Talese, *The Kingdom and the Power* (New York: The World Publishing Company, 1969), p. 308.

[32] Liebes, *op. cit.*, p. 436.

Apparently the telegraph was one of the first reference institutions. Murat Halstead, who worked on a daily newspaper for 40 years, wrote in the late 19th century of the influence of the early telegraphic news dispatches on news processing. His job, at the time of which he writes, was to clip the exchange newspapers.

> I usually had the papers opened and the scissors in my hand and the first slice of copy slashed, cut and on the desk of the foreman at two o'clock. The telegraphic dispatches, instead of exhausting the subject, had told me what to look for. The matter thus obtained was so displayed that it usually overwhelmed the news by telegraph.[33]

The research cited in support of the proposition that news organizations use other news organizations to reduce their uncertainty is not meant to exhaust the possibilities but merely to suggest the complexity of the process. The idea of reference institution implies a hierarchy, that the influence one organization has on another will be in terms of that organization's perceived expertise. It is apparent, however, that in some cases news organizations will use another organization's output to reduce its uncertainty, not because the other organization is perceived as superior but because the organizations are competitors and neither can afford to be "scooped" by the other.

Policy (2.4)

The news organization's policy is perhaps the single most important determinant of which of the day's events are defined as news. As Mayer points out, the key policy decisions are the financial ones which ultimately determine the probability of a member of the news organization being available or in the vicinity when an event occurs.[34]

Dimmick isolated two role-status complexes within the news organization. The policy-managerial complex functions to formulate policy and supervise the activities of the operations complex. While the policy complex defines the organization's goals, the operations complex receives news inputs from various sources and

[33] Murat Halstead, "The Varieties of Journalism," *Cosmopolitan*, December, 1892, pp. 204-5.

[34] Martin Mayer, "How Television News Covers the World," *Esquire*, January, 1972, p. 91.

processes these into newspapers or news broadcasts.[35] The goals of the members of the two complexes may be divergent to some extent. For example, Edward Epstein contrasts the role of the television network correspondent to that of the producer:

> Their primary job, almost all producers agreed, is to enforce the standards of the organization for which they work. In overseeing the news operation, from the initial selection of stories to their final presentation, producers closely parallel the work of correspondents—and at times find themselves at cross-purposes. Whereas the correspondent concerns himself mainly with the particular content of an event and attempts to find the most effective way of dramatizing it or at least making it into an interesting story, the producer concerns himself with fitting individual events into a general format in a way which both fulfills the requisites of the program and avoids any violations of the network's policies.[36]

Warren Breed observed that some aspects of policy remain covert because of the existence of ethical norms.[37] However, policy, in general, is most usefully conceived not as written statements but as residing in behavior. For example, Gieber writes concerning the policy of four California papers.

> Reporters express most often a complaint against a vague or ill-defined policy or lack of policy whatsoever. Only one newspaper has anything approaching written instructions. Reporters for the other four papers depend on newsroom communications—gossip. They admit they often imagine the existence of policy.[38]

Ralph Stogdill emphasized that the policy of an organization resides in behavior and may or may not conform to what is written in policy statements.[39] The news policy must be inferred by the

[35] Dimmick, *op. cit.*, pp. 9-13.

[36] Edward Jay Epstein, "The Values of Newsmen," *Television Quarterly*, Winter 1973, pp. 9-21.

[37] Warren Breed, "Newspaper 'Opinion Leaders' and Processes of Standardization," *Journalism Quarterly*, 32:277-84, 328 (Summer 1955).

[38] Walter Gieber, "Two Communicators of the News: A Study of the Roles of Sources and Reporters," *Social Forces*, 39 (October 1960), p. 80.

[39] Ralph Stogdill, "Dimensions of Organization Theory," in James D. Thompson (ed.), *Approaches to Organizational Design* (Pittsburgh: University of Pittsburgh Press, 1967), pp. 1-56.

analyst from the decisions and actions of the members of the organization.

The extant literature indicates that, in general, policy must also be inferred by the members of the news organization itself. The existence of policy is most apparent when it is violated by a member of the operations complex and the offender is reprimanded by a member or members of the policy-managerial complex. Gaye Tuchman reports that on a newspaper staff routine forms of policy enforcement include verbal scolding and editors' blue-pencilling of the offending copy.[40] In addition, Dunn reports that reporters can guage their adherence to policy by the placement and treatment given their stories in the newspaper.[41] Policy enforcement may also take the form of deprivation of professional autonomy. For example a field producer for ABC News said of Executive Producer Av Westin:

> You get to know what Av likes and what you can get past him, and you can go for months (doing your own projects) and never getting an assignment from him. In that sense he's an easy guy to work for. Unless you screw up. Then the reins get tighter, and you can find yourself sitting in New York for three weeks without a story to do.[42]

The hypothesis that an organization's news policy is a means of reducing the gate-keeper's uncertainty is supported by the findings of several studies. Breed was among the first to suggest the influence of policy.[43] Bowers' study of newspaper editors clearly demonstrates that the publishers he studied did direct decisions in the newsroom.[44] Gieber reports that political party preference of publishers influenced editors in their decisions and that the deskmen indicated that they acquiesced in their papers' political policy.[45] Under intensive interviewing, news editors studied by

[40] Gaye Tuchman, "Objectivity as Strategic Ritual: An Examination of Newsmen's Notions of Objectivity," *American Journal of Sociology*, 77:661 (January 1972).

[41] Dunn, *op. cit.*, p. 32.

[42] Quoted in James MacGregor "How Av Westin Decides What to Show on the Evening News," *Wall Street Journal*, November 22, 1972, pp. 1, 17.

[43] "Social Control in the Newsroom," *op. cit.*

[44] David A. Bowers, "A Report on Activity by Publishers in Directing Newsroom Decisions," *Journalism Quarterly*, 44:43-52 (Spring 1967), pp. 43-53.

[45] Walter Gieber, "Across the Desk," *op. cit.*

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Liebes admitted that policy did influence news judgment.[46] In Rivers' (1965) survey, 55% of the Washington correspondents answered "yes" when asked if they had had stories played down or killed for policy reasons.[47] Donohew found evidence that newspaper publisher policy was an important force in the news channel.[48] In an experiment conducted by Kerrick, Anderson and Swales, journalism student subjects wrote editorials and news stories biased in accord with a hypothetical news policy. The students who most disagreed with the policy used the fewest details supporting their own views in both the news stories and the editorials.[49]

News Source (2.5)

The reporter, in his boundary-spanning role, interacts not only with reporters from other gate-keeping organizations but also with news sources who are members of institutions which may not share his goals and norms. The acceptance of a news source's definition of news as a means of reducing the gate-keeper's uncertainty is lent credence by studies by Gieber[50] and Rivers.[51] The city-hall reporters and the Washington correspondents in these studies came to accept the definitions of news promulgated by their sources through prolonged interaction.

The source-reporter relationship, however, should not be viewed as one of inevitable co-optation of the reporter and consequent restriction of his alternatives. Dunn, in his study of political reporters, found that sources often extend the reporter's range of potential stories by providing tips or explanations.[52] In addition, the news organization may adopt strategies to avoid prolonged contact between reporters and sources to avoid the co-optation of the reporter. The television networks, for example, avoid de-

[46] B. H. Liebes, *op. cit.*

[47] *Op. cit.*, pp. 176-91.

[48] Lewis Donohew, "Publishers and Their 'Influence' Groups," *Journalism Quarterly*, 42:112-13 (Winter 1965).

[49] Jean S. Kerrick, Thomas E. Anderson and Luita B. Swales, "Balance and the Writer's Attitude in News Stories and Editorials," *Journalism Quarterly*, 41:207-15 (Spring 1964).

[50] Walter Gieber, "Two Communicators," *op. cit.*, pp. 76-83.

[51] Rivers, *op. cit.*, pp. 13-40.

[52] Dunn, *op. cit.*, p. 34.

veloping beats; they rotate their correspondents on prolonged events such as political campaigns. Epstein reports that this policy is effective. Only six of the 32 correspondents he interviewed claimed to have become friends with any of their sources.[53]

Attitudes and Values (2.6)

The classic case study by David M. White[54] and its replication by Snider[55] demonstrate the influence of what is known as bias—individual and group-related attitudes and values—on the selection of news. In a study of the reporting staff of two newspapers, Flegel and Chaffee found that reporters were strongly influenced in their reporting by their own opinions and that in cases where the reporters' views differed with the views of editors and readers, the reporters' views were more influential. This means of reducing uncertainty could be attributed to the influence of reference groups extraneous to the news organization or its sources.[56]

Proposition 3: Gate-keepers' decision spaces are multidimensional. The dimensions of the space are the criteria the gate-keeper uses to select news from the potential universe for broadcast or publication.

Warren Breed once proposed that a more precise and exhaustive attempt to define news be undertaken.

> What is news? ". . . an interesting recent event." "What people want to read about. . . ." "Whatever you'll find in the newspapers." ". . . what the editor says it is. . . ." These rather subjective maxims help some. Certainly, they are not incorrect. But do they tell us what news is?[57]

Breed is correct: These are subjective maxims. However, it is the journalist—the gate-keeper—who decides in the end what is

[53] Epstein, *op. cit.*, p. 13.

[54] David M. White, "The Gate Keeper: A Case Study in the Selection of News," *Journalism Quarterly*, 27:383-90 (Fall 1950).

[55] Paul B. Snider, "Mr. Gates Revisited: A 1966 Version of the 1949 Case Study," *Journalism Quarterly*, 44:419-27 (Autumn 1967).

[56] Ruth C. Flegel and Steven H. Chaffee, "Influences of Editors, Readers and Personal Opinions on Reporters," *Journalism Quarterly*, 48:645-51 (Winter 1971).

[57] "Analyzing News," p. 467.

news, and there are no objective criteria to guide him in doing so. If one is ever to understand the process of gate-keeping, one must abjure systems of formal classification such as Breed suggests. The answer to the question, "What is news?," will be found, not in the academician's mind, but in the "rather subjective maxims" which working newsmen use to fill the newshole of newspapers and the time allotted to news by broadcasting stations.

The proposition that the journalist uses multiple criteria to select news has received attention recently from communication researchers.[58] Similarly, Galtung and Ruge used 12 criteria to study the coverage of crises by foreign newspapers.[59] Indeed, it has long been assumed that journalists employ multiple criteria in selecting news. The traditional news selection criteria (e.g., timeliness, proximity, conflict) are found rather widely in journalism textbooks and the research literature.[60]

In addition to these traditional criteria or dimension of news selection, Liebes found that AP stories were used more often, in spite of a preference of some editors for UPI, because the AP tape was cleaner and saved re-setting to correct typographical errors.[61] Such technical aspects of the news selection process may become dimensions or selection criteria in the gate-keeper's decision space.

Finally, it seems obvious that the criteria by which a gate-keeper judges an event to be news will be determined to some extent by the way he views his role as journalist. Johnstone, Slawski and Bowman, in a study of 1,300 American journalists, found that some journalists held a "neutral" concept of the press role while others adhered to what these authors call a "participant" concept.[62] The former was styled the libertarian theory by Siebert, Peterson and Schramm while the latter view of the journalist's role was termed

[58] James K. Buckalew, "News Elements and Selection by Television News Editors," *Journal of Broadcasting*, 14:47-54 (Winter 1969-1970).

[59] Johan Galtung and Mari Holombe Ruge, "The Structure of Foreign News," in Jeremy Tunstall (ed.), *Media Sociology: A Reader* (Urbana: University of Illinois Press, 1970), pp. 259-98.

[60] Thomas Mario Pasqua, A Readership Model of News Values, Ph.D. dissertation, University of Texas at Austin, 1973, pp. 1-19.

[61] *Op. cit.*

[62] John W. C. Johnstone, Edward J. Slawski and William W. Bowman, "The Professional Values of American Newsmen," *Public Opinion Quarterly*, 36:522-40 (Winter 1972-73).

the social responsibility theory.[63] It seems clear that journalists holding different views of their roles would differ in their judgment as to the relative newsworthiness of a set of news stories.

The theoretical grounds for the multidimensionality of the gate-keeper's decision space resulting in *actual universe selection uncertainty* are provided by Clyde Coombs in his theory of data.

> The basic idea is that behavior is *intrinsically partially ordered.* Individuals A and B take a mental test and each passes items the other does not. In such a case it is not a clear and valid inference that A is better than B, because if he were he could do all that B can and more; nor can the contrary inference be made. . . . Whenever the task demands are a function of more than one dimension, the possibility of incomparabilities arises. A can do better than B in one respect and B better than A in another. The result is a partial order.[64]

An ordered metric is represented as A>B>C>D. A partial order, then, is represented as:

$$\begin{array}{l} >C \\ A>B>D>E. \end{array}$$

The dilemma of the journalist in processing a potential universe of events into the content of a news broadcast or a newspaper may be outlined broadly in the following way. Suppose a gate-keeper has defined a potential universe of news events. In practice, this universe is always larger than the "news hole," the number of events which time or space permit to be broadcast or printed. If the decision space is multidimensional, if more than one criterion of choice is employed at any given time, intransitivities may occur. Equalities or contradictions may occur in the journalist's decision space which prevent a set of news stories from satisfying the condition of an ordinal scale. That is, the journalist may not be able to say that one story is clearly more "newsworthy" than another. Operationally, then, the intransitivities which occur in the gate-keeper's decision space constitute what is meant by *actual universe selection uncertainty.*

The foregoing discussion of uncertainty may seem abstract and remote from the realities of journalism. But Richard L.

[63] Fred S. Siebert, Theodore Peterson and Wilbur Schram, *Four Theories of the Press* (Urbana: University of Illinois Press, 1963).

[64] Clyde H. Coombs, *A Theory of Data* (New York: John Wiley and Sons, Inc., 1964), p. 283.

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Tobin, a war correspondent in World War II, gives an example of his uncertainty when the attempted assassination of Hitler coincided with the nomination of Roosevelt to a fourth term.

> There was a great deal of discussion on how the story should have been played in America. It broke on the night of President Roosevelt's renomination to a fourth term. Which story should have led the paper? For sheer reader interest, I string along with the Hitler story, though there is no question about the Roosevelt nomination being historically important. If Hitler had died by assassination, there would have been no question of how the story should be played. Failing—well, it was an arguable point.[65]

In this example, the two relevant dimensions—"reader interest" and "historic importance"—make it difficult for Tobin to say which story is more newsworthy. The criterion which could have resolved the uncertainty—Hitler's death by assassination—is not relevant. Thus, multidimensionality, the use of more than one criterion in selecting news, results in intransitivity.

Given the actual universe selection uncertainty of the gate-keeper, the question remains: how does the journalist reduce the uncertainty to make decisions concerning which news items should be printed or broadcast and which of those items printed or broadcast are more important than the others and, therefore, warrant more time or space or a more prominent position in the newscast or newspaper?

Proposition 4: The gate-keeper's actual universe selection uncertainty is reduced (i.e., the partial order is mapped into a simple order) by the composition model(s) used by the gate-keeper.

Typically, the gate-keeper is faced with the following kind of problem: he is confronted with a universe of N items, of which he may select only n items for publication or broadcast. Suppose, for purposes of illustration, that the universe consists of five items of which there is only sufficient time or space for three. The journalist's first measurement task is to classify the items according to the categories he is employing. Let us suppose that of the five items—a, b, c, d and e—items a, b and e are categorized by the gate-keeper by a more or less unconscious procedure as proximate, while b and c are classified as timely. If only three items may be

[65] *Invasion Journal* (New York: E. P. Dutton Company, Inc., 1944).

selected from the five, the journalist must impose ordinality upon the items. He could, for example, decide that proximity was the more important of the categories and, imposing ordinality on the items in this category, select the two most "proximate" items in the proximity category and the most "timely" items in the timeliness category. However, this solution is only one of many possible ways in which the natural partial order can be mapped into an ordinal scale.

The example illustrates the uncertainty involved in the gatekeeper's actual universe selection process. As Coombs points out, there is no "best" solution:

> This problem is of interest because there is no natural or necessary or unique simple order to be obtained by compressing a partial order, and yet this natural partial order must be compressed if life and society are not to come to a standstill. In other words, choice and decision constitute an *indispensable* condition for existence, but choice and decision may require comparability of all pairs; *incomparability is intolerable.*[66]

As Coombs states, the journalist must impose a simple order over at least a segment of the space, and yet there is no single best way of doing so. The gate-keeper must use a composition model to reduce the partial order to a simple order. A composition model is a method of combining the dimensions of the decision space in some way to determine which stories will be selected from the potential universe to form the actual universe. Asking what composition model a journalist uses is equivalent to asking what he does on a cognitive level when he makes a decision. The answer to this central question can be found only in research. Coombs makes it clear that one cannot *a priori* specify which model will be used:

> I would not be surprised if each of these models were appropriate for some individuals for some stimuli, and I would be very surprised if one of them were "the" model. It would be foolish to apply a single model uncritically to the analysis of all preferential choice data.[67]

Among the composition models which have been identified by

[66] *Op. cit.*, p. 285.
[67] *Ibid.*, pp. 207-8.

Coombs and others are the conjunctive and disjunctive models. As an illustration of the use of these models, consider the consequences of using a conjunctive as opposed to a disjunctive model. The conjunctive model may be characterized linguistically by the relationship "and." For example, if a gate-keeper were using the news selection criteria of timeliness, proximity and conflict and a conjunctive model were used, a potential news item would be selected if it were timely *and* proximate *and* if it contained conflict. On the other hand, a disjunctive model would specify that an item would be selected if it were timely *or* proximate *or* if it contained conflict.

Galtung and Ruge proposed two models for the selection of foreign news. Positing that foreign news is selected on the basis of 12 criteria or factors, they offer two hypotheses concerning the manner in which the factors are combined in the selection process. The 12 factors were dichotomized (an event either does or does not possess them). Thus an event could receive a score of 0 to 12. These authors then propose two ways in which the 12 factors could be combined into a selection procedure, the "additivity hypothesis" and the "complementarity hypothesis." According to the additivity hypothesis, the higher the total score of an event the higher the probability it will become news. In other words, an event which possesses 8 of the 12 factors is more likely to become news than an event which possesses only 6. In contrast, the complementarity hypothesis states that if an event does not score highly on one of the 12 factors, it will be selected if it scores highly on another factor.[68] Although Galtung and Ruge's definitions and notation differ from those of Coombs, their additivity hypothesis is similar to the conjunctive model, while the complementarity hypothesis is similar to his disjunctive model.

Another important question which remains to be answered concerns the way individual composition models merge into group and organizational composition functions. Coombs writes:

> *A decision function is always a value system about the relative merits of attributes and how to combine them.* In our society a decision function tends to be a compromise among the value systems of those

[68] Galtung and Ruge, *op. cit.*, pp. 271-2.

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participating in the decision. This is almost inevitable in any society. Value systems are individual and a society's decision function cannot be equally satisfying to all.[69]

Almost every news story printed or broadcast reflects decisions made by more than one journalist. For example, a filmed news story for television will reflect the judgment of the gate-keeper who assigned the story to a reporter and film crew; it will reflect the decision of the reporter as to what portions of the event are filmed and what he will say about the event; it will even reflect the decision of the film editor who decides which portions of the newsfilm will be cut. The ways in which the composition models of these various individuals influence the final news story—the organization's output—can be found only by research.

[69] P. 289. (Original stress.)

The Pilot Study

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THE EXTANT gate-keeper studies provide considerable but scattered evidence concerning the modes of uncertainty reduction utilized by journalistic decision makers. For that reason a pilot study was designed to answer questions pertaining to the structure of the gate-keeper's decision space.

The first question concerned the dimensionality of the gate-keeper's decision space. In other words, Proposition 3, which states that the gate-keeper's decision space is multidimensional, had to be tested empirically.

Another question, unrelated to Proposition 3, concerns the complexity of the perceptions of news held by journalists and non-journalists. Experience or training in journalism should result in increased complexity of perception in the same way that cornfields or jack-pine forests, which all look alike to the urbanite, are perceived to be rich in variation by the farmer and the forester.

The third question for research involved finding a suitable substantive interpretation for the dimensions of the decision space. The mathematical model underlying multidimensional scaling programs uses iterative means to arrive at a dimensional solution for the input data. Labeling these dimensions, however, must be done extra-mathematically. Green and Carmone suggest several methods for labeling the dimensions. For example, the experimenter may choose stimuli which vary in their physical characteristics in some known way. The dimensions obtained are then interpreted in terms of these physical characteristics. Second, the subject may be asked to articulate the criteria he used in making similarities or preference judgments. Third, the subject may be asked to make similarities or preference judgments with respect to a set of prespecified attributes. Fourth, subjects might be shown their perceptual maps of a set of stimulus items and asked to interpret them.[79]

[79] Paul E. Green and Frank J. Carmone, *Multidimensional Scaling and Related Techniques in Marketing Analysis* (Boston: Allyn and Bacon, Inc., 1970), p. 130.

The method chosen in this study was the "outside property fitting method" in which property scale values are obtained independently of the judgments of similarity. This method was chosen because the separate reviews of the literature by Buckalew and Pasqua indicated the importance of such factors as timeliness, conflict and proximity in journalistic decision making.[71] The primary objective here was to ascertain the adequacy of these factors in explaining the perception of news. Hence, the subjects were not required to make their similarities judgments in terms of these attributes. Instead, a subject's judgments as to the similarity of the news stories and his ratings of the stories on the news perception criteria were obtained separately.

Scaling Decisions

The measurement techniques and computer programs used in this study are referred to collectively as multidimensional scaling. Multidimensional scaling is concerned with the spatial or geometric representation of two types of behavioral data—perceptions of stimuli and preferences for stimuli. This study deals with the former.

In attempting to infer the dimensions along which any set of stimuli are perceived, whether the stimulus items are news stories or oil paintings, one obtains subject judgments of the pairwise similarity of the stimulus items. In the data classification formulated by Coombs, similarities data involve relations on pairs of points from the same set of stimuli.[72] The collection and analysis of similarities data is a general method of inferring the dimensions along which human beings perceive or "measure" each other and the objects in their environment. As such, it is as applicable to gate-keepers' perceptions of news stories as it is to any of the myriad measurement activities in which human beings engage.

The collection and analysis of similarities data is accomplished in the following way. A subject or group of subjects might, for example, be given all possible pairs of a set of stimulus items and instructed to rank order the stimulus pairs with respect to their similarity, using whatever definition of similarity he chooses. The

[71] James K. Buckalew, *op. cit.*, Thomas Mario Pasqua, *op. cit.*

[72] The most comprehensive treatment of data theory is found, of course, in Coombs' own *Theory of Data, op. cit.* A briefer version of data theory may be found in Green and Carmone, *op. cit.*, pp. 27-30.

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stimuli are then scaled as n points in a space of r dimensions. Computation routines such as MDSCAL utilize the interpoint distances to find a dimensional solution which best characterizes the configuration of points.

The result is a set of dimensions or a "perceptual map" of the subject's or the subject group's perceptions of the stimuli. One way of putting it is that multidimensional scaling infers the subject's definition of similarity from the subject's own behavior.[73]

Two advantages are cited for multidimensional scaling over traditional scaling methods. First, the former techniques make weaker but more tenable assumptions about the level of measurement being used. Second, they attempt to find the dimensions on which stimuli are perceived, rather than assuming perceptions to be unidimensional.[74]

Perhaps the principal advantage of multidimensional analysis from the viewpoint of this study is that these techniques of measuring behavior grew out of the theoretical work of Clyde Coombs and his colleagues and it was on this that a portion of the theory (i.e., Propositions 3 and 4) is based.

Procedure

Subjects were 30 persons selected to represent various degrees of journalistic experience. Sixteen undergraduates enrolled in a Speech 100 section in the summer of 1972 at the University of Michigan were chosen as subjects with no experience in journalism. Six reporters and editors employed by the Ann Arbor *News*, six members of the Detroit Bureau of Associated Press and two newsmen from radio station WUOM in Ann Arbor were chosen to represent a subgroup with professional journalism experience.

A pretest established that all possible pairs of the summary leads of ten news stories ($N = 45$) were close to the maximum which subjects could scale without showing the effects of fatigue or boredom in their responses. Accordingly, ten news stories were selected as stimulus items by the following procedure:

From a universe of 68 national and international news stories

[73] An extensive analysis of the psychological theory implied by multidimensional scaling techniques is contained in Richard Beals, David H. Krantz and Amos Tversky, "The Foundations of Multidimensional Scaling," Michigan Mathematical Psychology Program, MMPP 67-2.

[74] Coombs, *op. cit.*, p. 49.

transmitted by the AP-TTS wire on May 31, 1972, the summary leads from 25 stories were randomly selected. Three members of the journalism faculty at the University of Michigan who had considerable experience with the AP wire were asked to choose the ten stories most "representative" of the content of the AP wire, using their own definitions of representativeness. From the 25 randomly selected summary leads, the ten chosen for use in the study were selected as most representative by at least two of the three judges.

Subjects were given a booklet containing the ten summary leads (see Appendix) and instructed to read them carefully. Subjects were then given a set of 45 cards on each of which appeared one of the 45 possible pairs of the ten summary leads. The subject was asked to separate the cards into two piles, one containing leads he felt were "similar," using whatever definition of similarity he chose, the other pile containing leads he felt were different.

Next, the subject was asked to choose the most similar pair within the "similar" subpile and place it on top of the pile. He was instructed to place the second most similar pair under the first pair and continue the process until all the cards within this subpile had been ranked. The subject then ranked the "different" subpile in the same manner, beginning with the most similar pair. The subject was allowed to shift a card to another subpile if he so desired. The "similar" pile was then placed on top of the "different" pile to yield a simple similarity rank order of the 45 pairs of stories for each subject.

Then the subject was given a booklet of 10 pages, each of which contained rating scales based on five news selection criteria—conflict, proximity, timeliness, known principal and significance. The rating scale definitions were based on those used by Buckalew, who also used these traditional criteria.[75] The rating scale ranged

[75] *Op. cit.* The definitions of the criteria read as follows:

"*Conflict:* news items involving verbal or physical open clashes between principals of the story or between the principals and natural forces. *Timeliness:* news items about recent happenings or fresh stories never used by any of the media. *Proximity:* stories about people or events geographically close to this immediate area. *Significance:* stories concerning matters likely to have an effect on many members of the audience. *Known Principal:* stories involving persons or institutions or issues that are well known through past publicity or position in the society and/or the community.

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from 0, indicating that a criterion did not apply, to 5, indicating that a story possessed a given attribute to a high degree. The subjects were asked to rate each of the ten stories on the rating scale.

The data analysis involved four distinct phases. In Phase 1, average rank orders for each story pair and the average rating on each of the five scales for each of the ten summary leads was computed for the two groups of subjects. In Phase 2 of the analysis, the average rank orders of the pairs of summary leads for each of the groups was submitted to the TORSCA program, which was used to provide an initial set of points of a "starting configuration" for MDSCAL.[76] In Phase 3, MDSCAL was used to find a set of dimensions appropriate to characterize each of the groups' perceptual spaces. Finally, in Phase 4, the set of dimensions obtained from MDSCAL and the two groups' mean ratings of ten summary leads on the five news perception criteria were submitted to the PREFMAP program. The output of the PREFMAP program is a joint space map of the news stories and a set of vectors representing the five criteria of news perception.

The question of the number of dimensions chosen to represent a set of similarities data is related to how well the data "fit" a space of given dimensionality. The index of fit of the input to an estimated configuration of points is termed "stress." The lower the stress value, the better the input data fit the estimated configuration.[77]

[76] Capsule descriptions of the three computer programs used in the study may be found in Green and Carmone, *op. cit.*, pp. 141-57. MDSCAL is a nonmetric program while TORSCA is a metric program. Nonmetric programs use only the ordinal properties of the input data, while metric programs assume the data to be interval-scaled. In other words, nonmetric programs utilize only the information that the distance between one pair of points is greater than or less than the distance between a second pair of points. Metric programs calculate the interpoint distances not only as greater than or less than, but, in addition, assume that the distance between one pair of points and a second pair is equal to the distance between the second pair of points and a third pair of points. Nonmetric programs are preferable because they make fewer assumptions concerning the level of measurement properties of the input data. However, nonmetric programs sometimes yield misleading solutions because they do not assume the input data to be interval-scaled. For this reason, TORSCA was used to find a metric starting configuration for MDSCAL.

[77] See J. B. Kruskal, "Multidimensional Scaling by Optimizing Goodness to Fit a Nonmetric Hypothesis," *Psychometrika*, 29:1-27 (1964).

Table 1

MDSCAL Stress Measures

	Dimensions		
	1	2	3
No Experience	.007	.10	.02
Professionals	.25	.19	.13

Table 1 shows the stress measures obtained from the MDSCAL program. For the group with no experience, the stress indicates that a one-dimensional solution is most appropriate. However, this finding should be interpreted with some caution for two reasons. First, the differences in the stress measures over the three dimensions are quite small. Second, at this time there is no way of estimating the probability of the "fit" or stress measures occurring by chance.

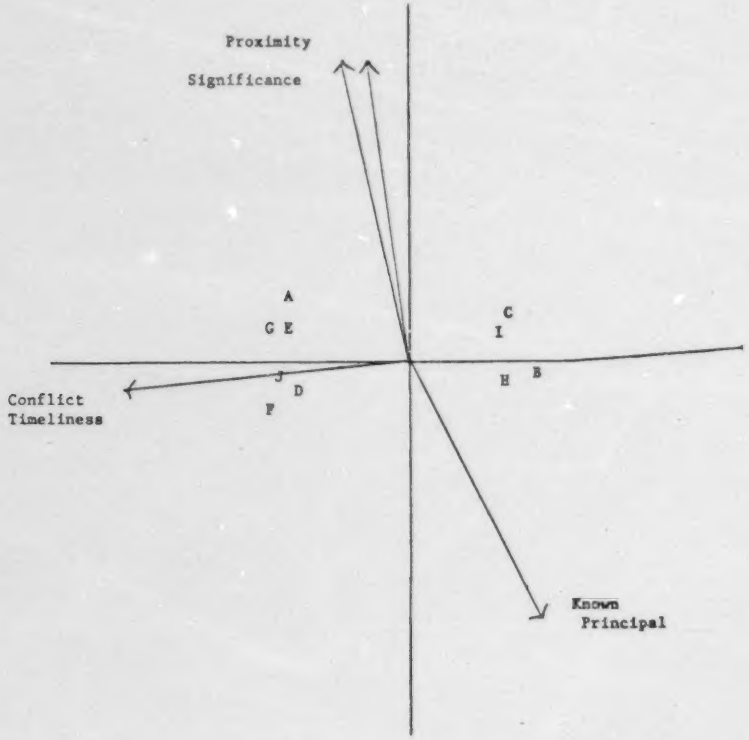
For the professionals, on the other hand, Table 1 shows a definite decrease in the stress measures as the dimensionality increases from one to three. Thus, a three-dimensional representation is most appropriate for this subject group.

Although, the dimensionality of the two groups' spaces is different, the maps (Figures 2 and 3) are displayed in two dimensions to facilitate comparison. In these figures the smaller the distance between two stories in the space the more similar the stories were perceived to be. For example, in Figure 2 the subjects with no experience saw stories A, G, E, J, F and D as similar. In fact, the most striking similarity in the maps is that the stories are scaled into two clusters, one cluster on each side of the vertical axis of the space. In both maps, stories A, E, F, J, D and G are clustered on the left side of the vertical axis, while stories H, I, C and B are clustered to the right of the vertical axis. While the dispersion of the stories varies, the stories within each cluster are generally nearer to each other than to stories in the other cluster, hence, the stories in each cluster were perceived as similar.

The basis for this within-cluster similarity may be found by examining the stories themselves. Stories A, E, F, J, D and G concern hijacking, a hijack ransom attempt, two bombings, a massacre and a prison riot. Stories H, I, C and B concern the death of the Duke of Windsor, the retirement of Pope Paul, an upcoming

election runoff and Henry Kissinger and a belly dancer. The common element in the first cluster of stories appears to be violence. The common element in the second cluster is that they concern well-known persons.

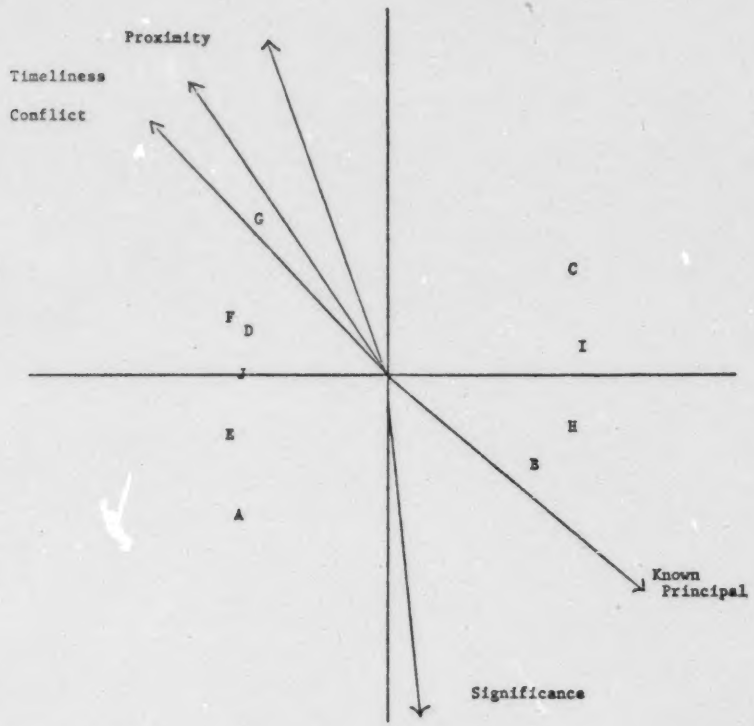
Within these two clusters, however, some differences are apparent. Figure 3 shows that, for the professionals, the stories within



Story Code

A. Hijacking
B. Kissinger
C. Runoff
D. Bombing
E. Hijack Ransom
F. Irish Bombing
G. Prison Rebellion
H. Duke of Windsor
I. Pope Paul
J. Massacre

FIGURE 2—Joint-Space Map of News Stories and Property Vectors: No Experience



Story Code

A. Hijacking
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I. Pope Paul
J. Massacre

FIGURE 3—*Joint-Space Map of News Stories and Property Vectors: Professionals*

each cluster are roughly equidistant, indicating a high perceived similarity. However, the proximity of stories F and D in the violence cluster shows that the two stories concerning bombing were perceived as quite similar. Stories G and A, which concern hijacking and prison rebellion, were perceived as the least similar of the violent stories. In the cluster containing stories concerning

well known persons, stories B and C were perceived as least similar, perhaps because story B was news only because of Kissinger, while the election would affect the composition of Congress.

In addition to examining the way the stories cluster in the space, the property vectors enable one to infer "how much" of a given attribute each story was perceived to possess. To determine the amount of a particular property the news stories were perceived by a particular group to possess, a line is projected from the story onto the vector so that the line intersects with the vector at an angle of 90 degrees.

Only the order of the projections of the points onto the vectors is relevant, whether the points project onto the vector above or below the origin. The farther out on the vector a particular story projects, the more of that property the story was perceived to have. For example, in Figure 3 the stories project onto the proximity vector in the order G, F, D, J, E, A, C, I, H, B; i.e., story G was seen as the most proximate and story B as the least proximate.

A geometrical interpretation of the correlation coefficient may be used to explicate the relationships between two vectors as the correlation between the two attributes. An angle of 0 degrees represents a positive correlation of unity. For example, in Figure 2, the conflict and timeliness vectors are colinear or perfectly correlated. This means that these two attributes were perceived by the inexperienced subjects as being identical. The cosine correlation for an angle of 90 degrees is zero; i.e., the two attributes are perceived as being wholly independent. For example, in Figure 2, the conflict-timeliness vector and the proximity vector form an angle of about 90 degrees, indicating that these properties were perceived by these same subjects as unrelated. Vectors whose angles range from 90 to 180 degrees are negatively correlated. For example, in Figure 3, the conflict and known principal vectors form an angle of nearly 180 degrees; the two vectors exhibit a negative correlation of about −1.0, meaning that they are very nearly opposites for the experienced subjects.

Finally, the vectors may be used to interpret substantively the dimensions of the three groups' spaces. The stress measures reported previously indicated that for the subjects with no experience, a one-dimensional solution was most appropriate, while for

the professionals a three-dimensional solution was required to adequately represent their configuration.

For the subjects with no experience, the substantive interpretation is straightforward. The only vector on which the stories project near the middle is the conflict-timeliness vector. On the other vectors, the stories project near the origin. Furthermore, those stories which project near the middle of the vector are those which concern violence (i.e., A, G, E, J, D and F). If one were to project the conflict-timeliness vector negatively from the origin, it would pass through the cluster of stories low in violence (i.e., C, I, H and B). Therefore, one could propose that to this group timeliness and conflict are virtually identical and that the single dimension latent to these two attributes is violence.

In contrast to the dimensional interpretation for the group with no experience, the interpretation of the dimensions in the professionals' space is less than straightforward. First, the proximity, timelessness and conflict vectors are highly and positively correlated. Second, the known principal and significance vectors are positively correlated. Third, the significance and known principal vectors are negatively correlated with the other three property vectors. The stress measures clearly indicate that a three-dimensional solution is appropriate, but the lack of independence between the vectors does not enable the analyst to interpret them substantively. The five traditional dimensions of news perception used in this study were perceived as so highly related by the professionals that the dimensionality of the space is virtually one. In the case of the professionals, then, there are two dimensions which are not interpretable by using the traditional criteria of news perception and selection.

The news perception of subjects with no experience and of the professionals, representing subsets of audience and gate-keepers, are thus quite different. The greatest difference is that the space of the group with no experience is unidimensional, while the space of the professionals is three-dimensional. The only similarity between the two spaces is that the traditional news criteria do not yield a substantive interpretation of the dimensions. In the case of the subjects with no experience, the vectors are largely irrelevant, but the configuration of the stories themselves provides an interpretation. In the case of the professionals, however, the vectors are so highly correlated that they form virtually one

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dimension.[78] A possible interpretation, of course, is that for the newsmen-subjects the single dimension is "news."

The pilot study thus provided support for Proposition 3 in two respects: first, gate-keepers' perceptions of the ten news stories was multidimensional; second, the perception of news by the journalists was more complex than those of non-journalists, as indicated by the number of dimensions needed. However, the dimensions of the journalists' perceptual space could not be interpreted in terms of the traditional news selection criteria, unless its interpretation is that for newsmen there is a single dimension: news.

Further Research

The pilot study reported in the foregoing pages provided tentative answers to some basic questions concerning gate-keepers' perceptions of news stories. Further theoretical and methodological refinement will require gathering data on gate-keeping behavior in the organizational context in which it occurs.

The gate-keeper studies reviewed earlier suggest numerous general strategies or uncertainty reduction modes which gate-keepers in news organizations use to identify a potential universe of news stories. Research is needed to define the uncertainty reduction strategies used by gate-keepers in news organizations to identify inputs and the ways in which the strategies vary from organization to organization.

The spatial measurement of news judgment made possible by

[78] Clearly, another approach to dimensional interpretation is indicated in future studies of the audience and the journalist. The most direct approach, of course, would be simply to ask a newsman why he considers two news stories to be similar or different. The author's experience in conducting this study is that newsmen are quite willing to talk about their work. The reasons given by the newsmen for considering stories to be similar or different could be compared to the way in which the stories relate to each other and the dimensions of the space in order to arrive at a substantive interpretation of the dimensions. The disadvantage of utilizing interviewing techniques while collecting similarities data is that such a procedure would be cumbersome and slow. However, the failure of the rating scale data in this study to provide an interpretation of the dimensions points to the necessity in the future of adopting some other procedure. Another alternative is to construct or select stories which vary on prespecified attributes and interpret the dimensions in terms of these attributes.

multidimensional scaling techniques may be used, as in the pilot study, to measure the dimensions along which news is perceived. In addition, preferential choice data may also be collected which would enable one to infer the gate-keeper's judgment as to the relative importance of a set of news stories.

Finally, research is additionally required to determine the composition models used by gate-keepers in selecting news stories from the potential universe for broadcast or publication. One would not expect one composition model or set of models to be characteristic of journalistic decision-making in general. However, in the same way that a dimension such as visual interest would be characteristic of television gate-keepers and irrelevant to gate-keepers in the print media, a particular model or models might be characteristic of the gate-keepers in a particular medium. For example, Martin Mayer points out that one big difference between newspaper and broadcast news organizations is the size of the news hole.[79] Large metropolitan dailies select ten percent of their input for publication; the television networks broadcast only two percent of their input. Such differences might result in the use of different composition models by gate-keepers in the television and newspaper organizations.

The emphasis here on the spatial representation of news judgment should not obscure the necessity of using other data collection techniques in the study of news organizations. The goal is not merely to obtain the perceptual and preference maps of gate-keepers in an organization but to be able to interpret such maps in substantive terms. The more information concerning the organization possessed by the researcher, the more likely it is that an interpretation of the maps of the organization's gate-keepers will be valid.

The research procedure might begin with the construction of an organizational chart. Interviews or participant observation techniques could then be used to define the interaction patterns of members of the policy-managerial and operations complex and to infer the organization's news policies. An open-ended sociometric such as a snowball sample could be used to chart the interactions of the informal organization in order to isolate the influ-

[79] Mayer, *op. cit.*, p. 71.

entials within the various sub-system[80] of the organization. The final step in the research procedure would then be to obtain perceptual and preference data using samples of the organization's input, such data to be used to construct the maps of the news organization's gate-keepers.

[80] Charles Kadushin, "Power, Influence and Social Circles: A New Methodology for Studying Opinion Makers," *American Sociological Review*, 33: 685-99 (October 1968).

Appendix

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Summary Leads of Ten Stories from the Associated Press

A) HIJACKING

NEW YORK (AP) 31 May—Aviation, as old as this century, has known hijacking only since 1961. It began when Antulio Pamirez, a diminutive air pirate, stormed into a cockpit, shakily brandished a knife and gun and stammered, "Let's go to Havana."

Scores of hijackers, inflamed by political zeal, lusting after wealth, reaching for fame or deluded by troubled minds have since then hijacked jets around the world with deadly weapons, and sometimes toys. Some of them have died. Some have gone free. And some have been killed.

B) KISSINGER

TEHRAN (AP) 31 May—Henry A. Kissinger met a belly dancer early today and she ended up in his lap.

The raven-haired beauty, 28-year-old Nadina Parsa, was performing for several hundred journalists and government officials at a dinner party given by the Ministry of Information when President Nixon's bachelor aide arrived after midnight.

C) McCLELLAN RUNOFF

LITTLE ROCK, ARK. (AP) 31 May—Sen. John L. McClellan, powerful 30-year veteran of the Senate, appeared to be heading toward a politically perilous runoff with youthful Congressman David Pryor in returns of the Arkansas Democratic primary.

D) BOMBING

TEHRAN (AP) 31 May—The bombs that peppered the Iranian capital during the Nixons' visit killed one Iranian woman and broke both legs of a U.S. Air Force general stationed in Tehran. One exploded near a royal tomb before Nixon got there to place a wreath.

E) HIJACK RANSOM

SAO PAULO, BRAZIL (AP) 31 May—Brazilian authorities turned over $50,000 and three parachutes demanded by a hijacker, got the other 85 passengers and crew members off the Brazilian airliner and then recaptured the plane.

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F) IRISH BOMBING

BELFAST (AP) 31 May—A bomb damaged the heavily sandbagged Springfield Road police station and army command post in Belfast, killing one British soldier and wounding four other soldiers and two civilians.

G) PRISON REBELLION

PATERSON, N.J. (AP) 31 May—Six rebellious inmates protesting conditions at the Passiac County jail have surrendered following a four-hour rebellion in which six guards were injured.

H) DUKE OF WINDSOR

LONDON (AP) 31 May—A Royal Air Force plane brought the body of the Duke of Windsor home to England.

I) POPE PAUL

VATICAN CITY (AP) 31 May—Pope Paul VI would like to resign but apparently feels he cannot, according to remarks taped by the Vatican.

"It would be beautiful to be able to shake off the burden of the Church and say I do not want it," Pope Paul said in a private speech to a group of nuns at a time when the Italian press was debating whether the pontiff would abdicate when he turns 75 on Sept. 26.

J) MASSACRE

TEL AVIV (AP) 31 May—Three young Japanese terrorists hired by a Palestine guerilla movement staged a massacre with submachine guns and grenades in the passenger terminal at Israel's international airport, killing at least 22 persons and wounding more than 70.